BRISTOL BABCOCK
instruments/systems

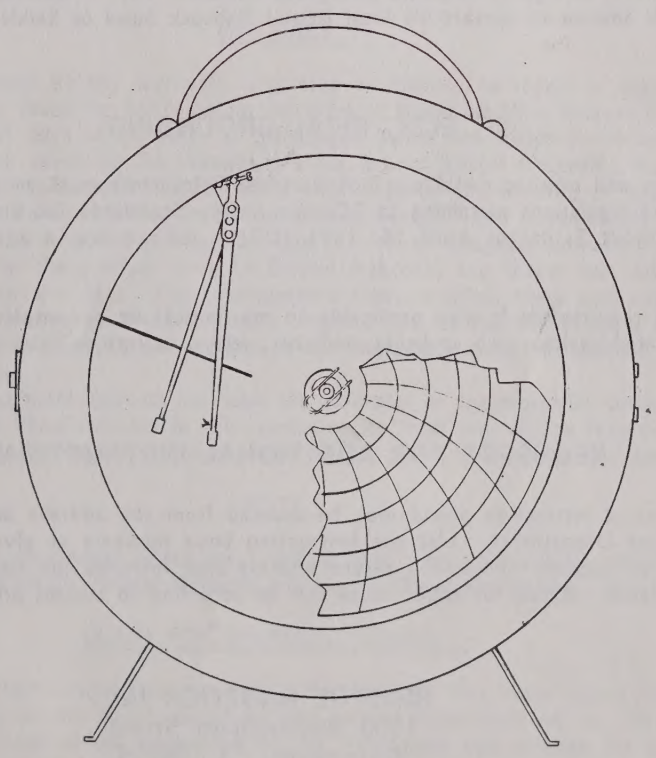
instructions

Issue: 08/85 H10210

THERMO-HUMIDIGRAPH

MODELS 56912-66A & 56912-68A

+ F4069TH FOR CAL.



Bristol Babcock Inc.

IMPORTANT! READ INSTRUCTIONS BEFORE STARTING!

Be sure that these instructions are carefully read and understood before any operation is attempted. Improper use of this device in some applications may result in damage or injury. The user is urged to keep this book filed in a convenient location for future reference.

These instructions may not cover all details or variations in equipment, or cover every possible situation to be met in connection with installation, operation or maintenance. Should problems arise that are not covered sufficiently in the text, the purchaser is advised to contact his local Bristol Babcock Sales or Service Representative for further information.

EQUIPMENT APPLICATION WARNING

The customer should note that a failure of this instrument or system, for whatever reason, may leave an operating process without protection. Depending upon the application, this could result in possible damage to property, or injury to persons. It is suggested that the purchaser review the need for additional backed equipment or alternate means of protection such as alarms, output limited, failure valves, relief valves, emergency shutoffs, emergency switches, etc. If additional information is required, the purchaser is advised to contact his local Bristol Babcock Sales or Service Representative.

ELECTRICAL GROUNDING

Metal enclosures and exposed metal parts of electrical instruments must be grounded in accordance with OSHA rules and regulations pertaining to "Design Safety Standards for Electrical Systems," 29 CFR, Part 1910, Subpart S, dated: April 16, 1981 (OSHA rulings are in agreement with the National Electrical Code).

The grounding requirement is also applicable to mechanical or pneumatic instruments that include electrically-operated devices such as lights, switches, relays, alarms or chart drives.

REQUESTS FOR ADDITIONAL INSTRUCTIONS

Additional copies of instruction books may be ordered from the address below per attention of Sales Order Processing Department. List the instruction book numbers or give the complete instrument model and serial number. Furnish a return address that includes the name of the person who will receive the material. Billing for extra copies will be according to current pricing schedules.

BRISTOL BABCOCK INC.
1100 Buckingham Street
Watertown, CT. 06795
(203) 575-3000 (800) 243-3576

STATEMENT OF WARRANTY

(a) Bristol Babcock Inc warrants that istruments described herein and manufactured by Bristol Babcock are free from defects in material and workmanship for one year from the date of shipment unless otherwise agreed to by Bristol Babcock in writing.

(b) Bristol Babcock warrants that goods repaired by it pursuant to the warranty, and also replacement parts, are free from defects in material and workmanship for a period to the end of the original warranty period or 90 days from the date of shipment of repaired goods, whichever is later.

(c) Warranties on goods sold by, but not manufactured by Bristol Babcock are expressly limited to the terms of the warranties given by the manufacturer of such goods.

(d) All warranties are terminated in the event that the goods or systems or any part hereof are: (1) misused, abused or otherwise damaged; (2) repaired, altered or modified without Bristol Babcock's consent; (3) not installed, maintained and operated in strict compliance with instructions furnished by Bristol Babcock; (4) worn, injured or damaged from abnormal or abusive use in service time.

(e) These warranties are expressly in lieu of all other warranties expressed or implied (including without limitation warranties as to merchantability and fitness for a particular purpose), and no warranties expressed or implied, nor any representations, promises, or statements have been made by Bristol Babcock Inc. unless endorsed herein in writing. Further, there are no warranties which extend beyond the description of the face hereof.

(f) No agent of Bristol Babcock is authorized to assume any liability for it or to make any written or oral warranties beyond those set forth herein.

REMEDIES

(a) Buyer's sole remedy for breach of any warranty is limited exclusively to repair or replacement without cost to Buyer of any goods or parts found by Seller to be defective if Buyer notifies Bristol Babcock in writing of the alleged defect within ten (10) days of discovery of the alleged defect and within the warranty period stated above, and if the Buyer returns such goods to the Waterbury office, unless Bristol Babcock's Waterbury office designates a different location, transportation prepaid, within thirty (30) days of the sending of such notification and which upon examination by Bristol Babcock proves to be defective in material and workmanship. Bristol Babcock is not responsible for any costs of removal, dismantling or reinstallation of allegedly defective or defective goods. If a Buyer does not wish to ship the product back to Bristol Babcock, the Buyer can arrange to have a Bristol Babcock serviceman come to the site. The Serviceman's transportation time and expenses to and from the Buyer's premises and any overtime or living expenses incurred will be for the account of the Buyer. However, labor for warranty work during normal working hours is not chargeable except as defined in note below.

(b) Under no circumstances will Bristol Babcock be liable for incidental or consequential damages resulting from breach of any agreement relating to items included in this quotation or from use of the information herein or from the purchase or use by Buyer, its employees or other parties of the goods sold under said agreement.

NOTE

For goods submitted for warranty repair which are found to have been damaged by misuse or abuse, or are found to be fully operational and accurate; Bristol Babcock will invoice Buyer for repairs, inspection or tests.

CLAIM FOR DAMAGED GOODS

If damage has occurred, a claim should be made with the carrier. The claim agent should receive a complete report of damage and a copy of the report should be sent to our Waterbury office. After receiving this report, Bristol Babcock will advise buyer of the disposition of the instrument and arrange for its repair or replacement. Include the model number and serial number when referring to this instrument for any reason.

WARRANTY INSTRUCTIONS

Follow the instructions provided on the other side of this sheet for factory repair service. Clearly identify the shipment as a warranty repair request.

FACTORY REPAIR SERVICE & REPLACEMENT PARTS

If it is desired to return a defective instrument for repairs, prior arrangement for shipment must be made with a Bristol Babcock Sales Office or company representative. If preferred, repair arrangements can also be made with the Bristol Babcock factory in Watertown at the address below. Never ship instruments without advance clearance as this will cause confusion and delays.

When returning equipment for repair, a copy of this page must be filled out and attached to the instrument for proper identification. It is recommended that the purchaser also maintain a copy of the completed form for reference.

Requests for warranty repairs must be checked off below when filling out this form. The warranty conditions are stated on the back of this sheet. All return shipments, whether in or out of warranty, must be prepaid by the sender.

There will be a nominal charge for repair estimates. If purchaser agrees to proceed with repairs, only the repair costs will apply.

Replacement parts or accessories can be ordered through local Sales Offices or directly from the factory. Send factory orders to the address below, attention of: Sales Order Processing Dept. Be sure to include the parts description, part number, model number and serial number. All orders are subject to a minimum billing fee.

REQUIRED INFORMATION FOR FACTORY REPAIRS

INSTRUMENT MODEL NO. SERIAL NO.

RETURN APPROVED BY CUST. PURCH. ORDER NO.
(required for all returned equipment)

DATE REQUESTED RETURN DATE WARRANTY REPAIR REQUEST: YES NO

RETURN ADDRESS:

Attn. _____

NAME & TELEPHONE NO. OF PERSON TO CONTACT IF OUR REPAIR DEPT. REQUIRES ADDITIONAL DATA:

NAME TELEPHONE & EXT. NO.

DESCRIBE EQUIPMENT DEFECT

SHIP PREPAID TO: Bristol Babcock Inc.
1100 Buckingham Street
Watertown, CT 06795

Attention: Instrument Repair Department

- Please maintain this page for future use. Make duplicates on copy machine as required. -

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Section I - Introduction

DESCRIPTION

General

Thermo-Humidgraphs are two-pen instruments that record temperature and humidity measurements simultaneously on an 8-inch diameter round chart. Both the temperature and humidity measuring elements are contained in the instrument, therby eliminating connections for external devices.

The temperature or hygroscopic elements respond to a change of measured medium by producing a mechanical rotary motion. The rotary motion is converted to a motion via a linkage arrangement which, in turn, positions the pen on the chart.

Models

Two types of recorder models are contained in this group. The Model 56912-68A, which employs a spring-wound chart drive and the Model 56912-66A, which employs an electric chart drive. Both have an internal helical hygroscopic element and an internal bi-metalic temperature element.

The Model 56912-66A differs physically from Model 56912-68A in that it includes a small fan mounted at the rear of the case. The fan provides forced circulation of air over both sensing elements to insure rapid measurement response.

The features contained in an instrument can be determined from the model number breakdown. Refer to Table 1-A or 1-B as required.

Chart Drives

Models with spring-wound chart drives provide dual speed operation. The 24-hour or 7-day speeds are selected shift lever on the chart drive. Models with electric chart drives provide single-speed operation of 24 hours or 7 days.

Inking System

Models in this group will be furnished with either a fountain pen inking system or a fiber-tip pen cartridge. The former is a refillable type, while the latter is a disposable type.

56912 - 66A - 1 5 3
1 2 A B C

1 = Basic series number

2 = Model group for Thermo-Humidigraph w/ electric drive

A = Measuring Range:
1 = 0-100 RH and 0-100°F
2 = 0-100 RH and -15 to +35°C

B = Chart Drive Speed (single speed):
1 = 24 Hour, 120 Vac, 60 Hz
2 = 7 Day, 120 Vac, 60 Hz
3 = 24 Hour, 120 Vac, 50 Hz
4 = 7 Day, 120 Vac, 50 Hz

C = Pen Type:
1 = Fountain Pen
3 = Fiber Tip Cartridge

Table 1-B. Breakdown of Model 56912-66A, Thermo-humidigraph

56912 - 68A - 1 5 3
1 2 A B C

1 = Basic series number

2 = Model group for Thermo-Humidigraph w/ spring-wound drive

A = Measuring Range:
1 = 0-100 RH and 0-100°F
2 = 0-100 RH and -15 to +35°C

B = Chart Drive Speed:
5 = Dual Speed, 24 hour & 7 day selections

C = Pen Type:
1 = Fountain Pen
3 = Fiber Tip Cartridge

Table 1-A. Breakdown of Model 56912-68A, Thermo-humidigraph

Section II - Installation

UNPACKING

Unpack the instrument slowly. Carefully remove any cushioning material, rubber bands, cardboard guards, etc. used in packing.

Check the packing slip to insure that the shipment is complete. Do not discard any packing material until all items have been checked.

Standard accessories such as charts, ink, pen cleaning wire, key, etc., are shipped with each instrument as required. In addition to the above listed standard accessories, the shipment may include other accessories as ordered.

CAUTION

Do not attempt to move the pen arms laterally across the chart as they are mechanically loaded by the measuring element. Forcing the pen arms to move laterally will cause instrument damage, necessitating factory repairs.

LOCATION

Choose a central location in the room, one that provides reasonable circulation of the air. Do not place instrument in a dead corner, or an alcove, or in the recess of a cabinet. Avoid locations in the direct flow of heat or air conditioning ducts as they will provide false indications of the ambient room temperature. Similarly, do not place the instrument close to, or on top of radiators, or next to drafty windows. Locations near windows where direct sunlight can fall on the instrument can also provide erroneous readings.

Do not place the instrument on a table or platform subject to steady mechanical vibration. Vibration may interfere with the chart recordings and, in severe cases, also cause the instrument to move and fall to the floor. Locations next to impact machinery such as drop presses should also be avoided for similar reasons.

Avoid prolonged operation in highly dusty or dirty areas. Dirt will eventually enter the instrument and build up on the measuring element and linkages causing erratic operation or inaccuracies. Areas subjected to caustic gases or fumes can also bring on similar problems and should be equally avoided.

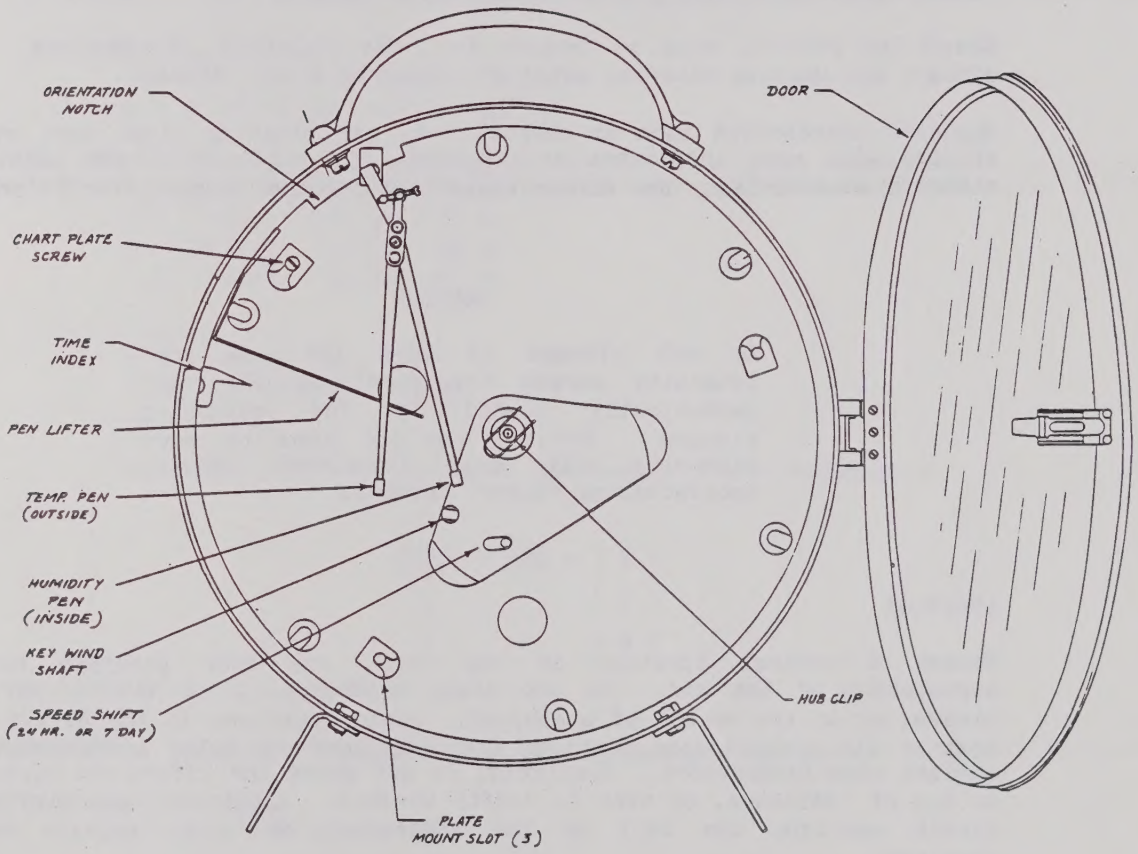

Figure 2-1. Instrument With Door Open

Section III - Operation

CHART LOADING

1. Open the door to access the pen and drive mechanism as shown in figure 2-1.
2. Lift pens away from the chart by pushing the upper tab at the left of the pen lifter inward.
3. Observe figure 3-1A. Slide chart hub clip toward rounded end and flip it upwards so that it is unlocked as shown in figure 3-1B.
4. Free expired chart (if present) from six guide lips surrounding periphery of chart by curling the chart slightly inward. Lift chart from hub and remove from instrument.
5. If instrument has a spring-wound drive, wind it up.

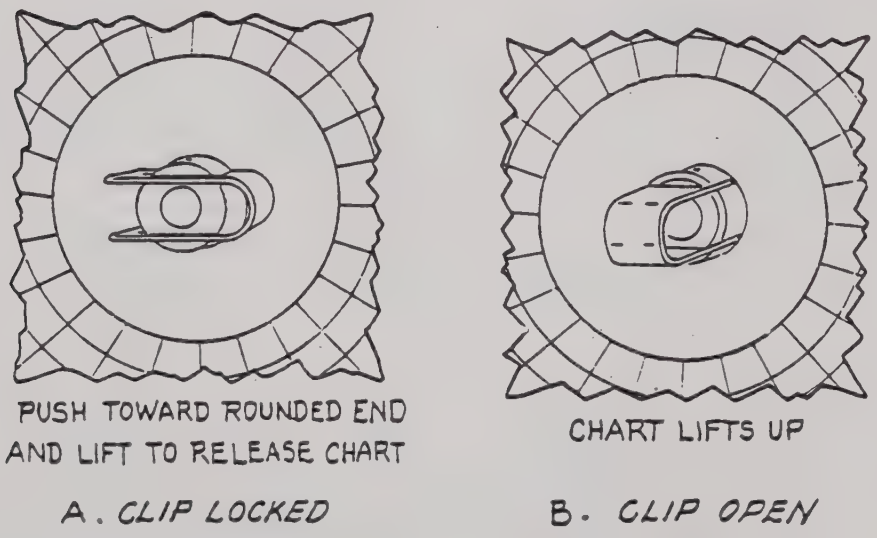

Figure 3-1. Operation Of Chart Hub Clip

6. Place new chart on hub and curl in slightly to fit under six guide lips on periphery of chart plate.

7. Rotate chart by hand until desired starting time is in line with time index.

NOTE

The time index is factory-set to follow the arc of the humidity pen (inside pen). The tracking time of the temperature pen will differ slightly.

8. While holding round chart against chart plate, flip hub clip over toward chart and slide in horizontally to lock chart into position.

9. Push extended bar of pen lifter inward toward the chart so that both pens come in contact with chart.

OPERATION OF CHART DRIVES

Spring-Wound Type

The key hole for the spring-wound drive is located behind the chart plate as shown in figure 2-1. To access the hole, raise the pens from the chart and remove the chart. The key is inserted in the hole and wound in a clockwise direction. It is recommended that the user wind the instrument each time the chart is changed to avoid a runout.

These drives are furnished with a speed shift lever to change between a 24-hour or 7-day chart speed as shown in figure 2-1. Markings are provided on the drive to indicate the speed.

Electric Type

The electric chart drive operates when the electrical line cord is plugged into a three-prong power outlet. No attempt should be made to defeat the third prong as the instrument will become a potential shock hazard. If a three-prong outlet is not available, an appropriate adapter with a grounding lead must be used. This grounding lead must be connected to the power outlet box via the screw that secures the front plate to the outlet.

Before operating the instrument, the user should make sure that the power line voltage and frequency agrees with that specified on the instrument data plate. Failure to do so can result in improper operation or damage to the instrument.

This instrument does not contain switches or fuses. Power is applied when the instrument is plugged in.

FILLING AND PRIMING FOUNTAIN PENS

The fountain pen operates by gravity-feed. Therefore, the recorder must be operated in reasonably level position to assure proper ink flow. The filling and priming of the fountain pen is performed as follows:

1. Place a piece of scrap paper under the pen tip.
2. Using an eyedropper, fill the pen reservoir to the two-third level as shown in figure 3-2. Do not overfill.
3. Place a piece of scrap paper under the pen tip and draw it back and forth until a trace is observed.
4. Once proper ink flow is achieved, remove the scrap paper and carefully place the pen in contact with the paper chart.

FIBER TIP PEN CARTRIDGES

General

Fiber tip pens (figure 3-3) provide the user with the ease of snap-on disposable cartridges. A fresh supply of ink is obtained each time the cartridge is changed and no cleaning or maintenance is required.

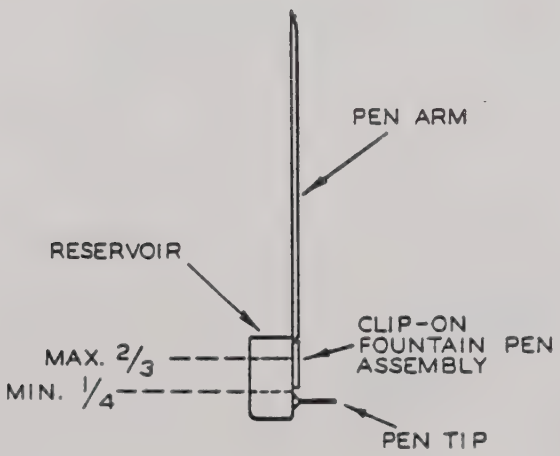

Figure 3-2. Fountain Pen Assembly

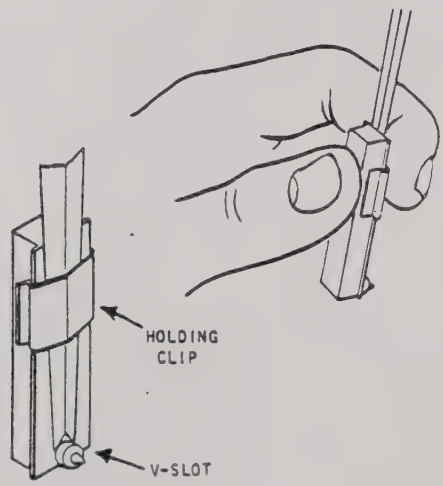

Figure 3-3. Fiber Tip Pen Cartridge

Changing Cartridges

The cartridges snap into the pen arm and are changed as follows:

1. Remove empty fiber tip pen cartridge by first lifting the flexible pen arm upward slightly from the chart.

2. Unsnap the holding clip with a fingernail or a small screwdriver. Maintain a firm grip on the pen arm as the clip is unsnapped to prevent excessive strain on the arm. Once the clip is unsnapped, the cartridge will fall away.

3. Referring to figure 3-3, carefully remove the holding clip from the cartridge.

4. Fit the "vee" slot at the end of the pen arm against the pen tip.

5. While maintaining the cartridge in position, snap the holding clip over the outer ridge of the pen to lock it into place.

Section IV - Service

FOUNTAIN PEN MAINTENANCE

Check ink level in pen reservoir each time chart is changed. Do not allow ink to run out and dry as clogging may occur in the pen orifice. Likewise, avoid filling the reservoir to the top as splashing will result. For best results, keep ink level between one quarter and two thirds full as shown in figure 3-2.

Avoid using old ink that has been exposed to air for prolonged periods as evaportaion may affect its composition. Do not dilute old or dried ink with fresh ink since this will only contaminate the new mixture. Always discard old or questionable ink.

FLUSHING AND CLEANING FOUNTAIN PENS

Fountain pens should be flushed and cleaned at regular intervals to achieve maximum inking efficiency. Failure to do this may cause the pen to provide smudgy or weak traces. Proceed as follows:

1. While holding pen arm (figure 3-2), carefully unclip fountain pen from end of pen arm.

2. Empty out any ink remaining in the reservoir and rinse pen thoroughly in hot water.

3. If pen is clogged, insert the cleaning wire from the accessory kit into the pen tip and work out caked deposits (figure 4-1). Rinse pen again in hot water and shake dry. For sever clogging, soak pen in alchohol while reaming the opening with the cleaning wire.

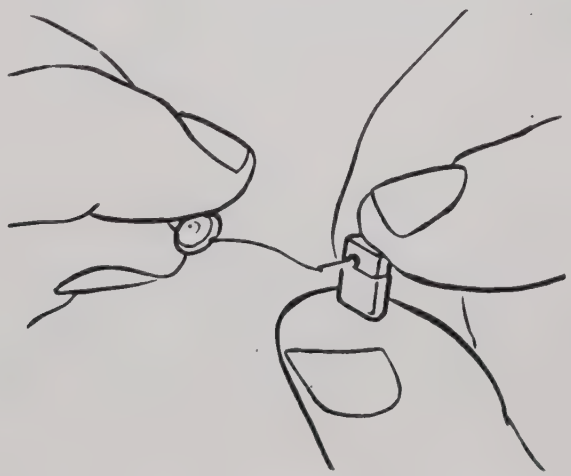

Figure 4-1. Use of Cleaning Wire On Fountain Pen

4. Clip pen assembly back into pen arm and fill reservoir with ink.

5. If ink tracings remain smudgy even after repeated cleanings, replace the fountain pen with a new assembly.

REMOVAL OF CHART PLATE

The chart plate may be removed for maintenance or service. Proceed as follows:

1. On models with electric chart drives, first unplug electrical cord from power outlet.

2. Lift pens from chart with pen lifter.

3. Remove paper chart.

4. Loosen chart plate screw located at upper left of chart plate (figure 2-1). Do not remove screw.

5. Grasp chart plate firmly and twist in a clockwise direction until all three support studs become disengaged.

6. Lift pen arms slightly and carefully maneuver chart plate out of case. The internal mechanisms are now accessible.

7. To re-install chart plate, carfully slide in the notched portion of the plate (figure 2-1) under the pen arms and hold in position.

8. Line up three slots in plate with studes protruding from case. Firmly rotate chart plate in a clockwise direction until all three studs are engaged. Plate may engage tightly.

9. Tighten chart plate screw to secure chart plate.

10. Replace paper chart and return instrument to normal operation.

11. Push pen lifter so that pens touch chart.

CALIBRATION OF SPRING-WOUND CHART DRIVES

If it is determined after some use that the chart speed is operating slightly above or below normal, the mechanical screw adj. on the chart drive assembly (figure 4-2) can be turned slightly in either direction for a correction. Adjustments should be made in small increments and checked against a precision timepiece or electronic counter. The checks are made by measuring the lapsed time between two close chart coordinates.

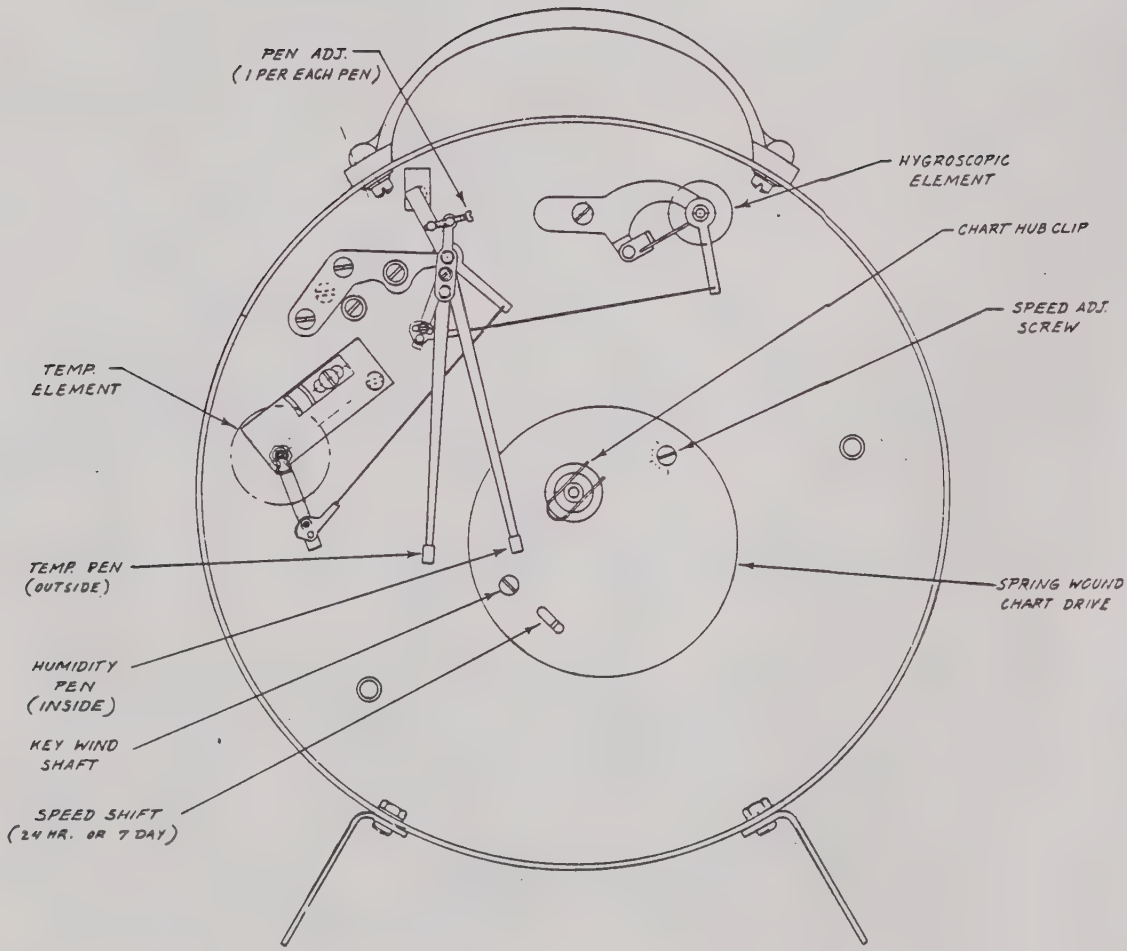

Figure 4-2. Model 56912-68A With Chart Plate Removed

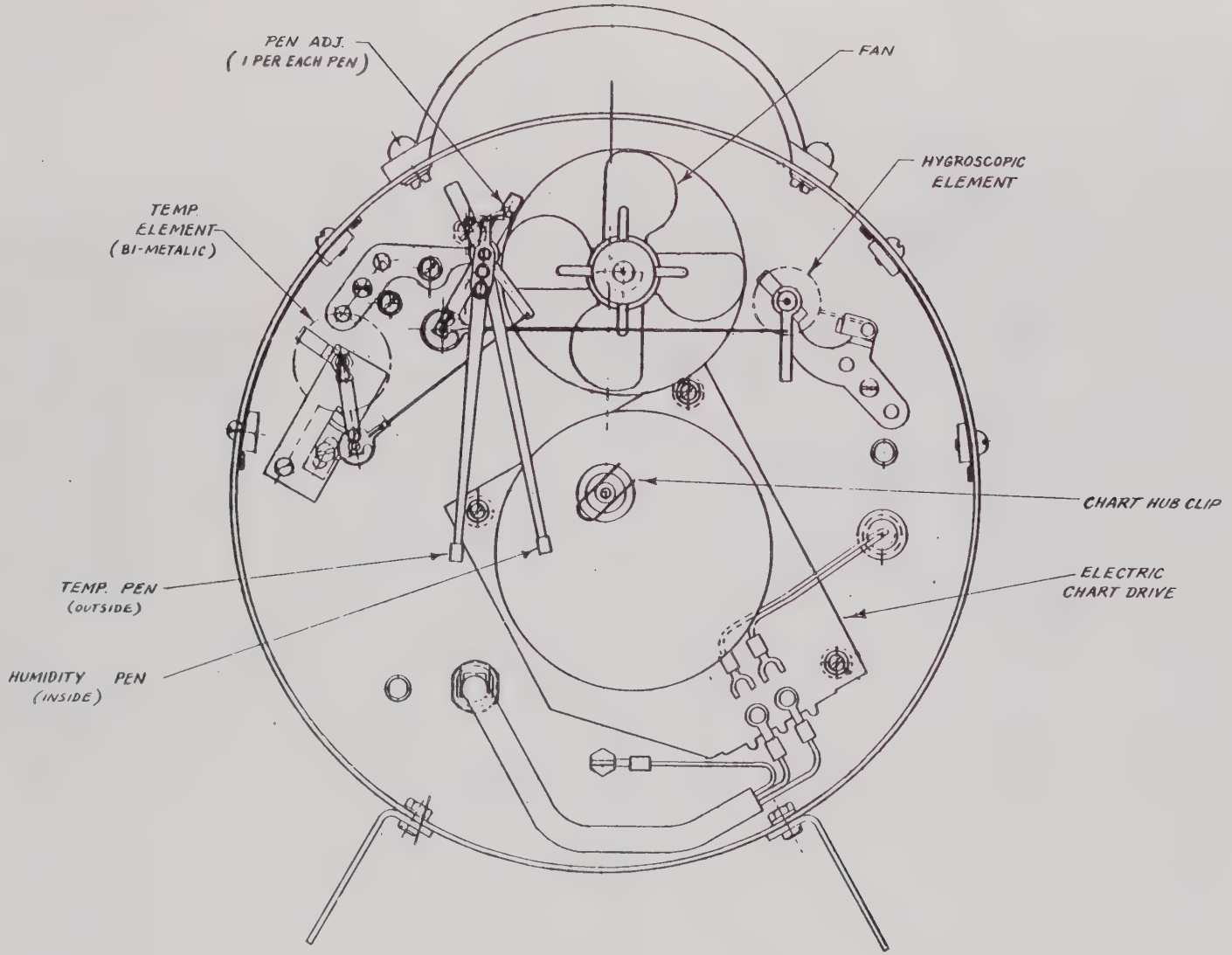

Figure 4-3. Model 56912-66A With Chart Plate Removed

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CALIBRATION OF PEN ARMS

Thermo-Humidigraphs have been carefully calibrated at the factory and normally do not require calibration. However, the humidity and temperature elements are equipped with a pen adjustment to make minor field corrections. To check calibration, the user will require a lab-type sling psychrometer and a room or an enviromental test chamber where the relative humidity and temperature can be held at steady values. Do not attempt any adjustment unless these conditions can be met.

If at all possible, the temperature and humidity checks should be performed with values that produce readings at approximately 50% of the instrument scale. If this cannot be accomplished, then readings should be held constant at values near the user's operating conditions.

The calibration adjustment should not be touched until it has been ascertained that a calibration error really exists. Indiscriminate adjustments may introduce errors into a properly operating instrument. In addition, no attempt should be made to tamper with the linkage or other factory-sealed calbration adjustments. If severe calibration errors are experienced, it is recommended that the user contact his nearest Bristol Babcock Service or Sales Office to make arrangements for factory repairs.

1. Allow the instrument to operate in the test environment for one hour so that readings can stabilize. Make all readings and adjustments with the instrument in its normal upright operating position, standing level on its legs.

2. For maximum accuracy, make sure that the psychrometer is equipped with a new wick and that the wet bulb is dipped in distilled water. This will insure that the measurements will have maximum accuracy.

4. Take a position as close as possible to the Thermo-Hunmidigraph. Twirl the psychrometer for about thirty seconds at a fairly constant rate.

5. After thirty seconds, stop the twirling and quickly read the wet and dry bulbs. Swing the unit for thirty seconds more and read the bulbs again. Repeat this procedure, several times until no further drops in wet bulb temperature are experienced.

CAUTION

If two consecutive readings indicate a rise in temperature of the wet bulb, dip the wick in the distilled water and start over.

5. When two consecutive readings of the wet bulb are in agreement, this becomes the final reading. Record the readings of the dry and wet bulbs and compute the relative humidity using tables provided for the psychrometer.

6. If the reading of the temperature pen exceeds the dry bulb reading of the psychrometer by ±0.5%, an adjustment will be required. Referring to either figure 4-2 or 4-3, locate the pen adj.

7. Using a screwdrive, turn the pen adj. of the temperature pen slightly in either direction until a proper reading is obtained.

NOTE

The rotation period of a 24-hour or 7-day chart is too long to see the results on a chart. To speed up the action, unclip the chart hub so that chart is free. Rotate chart by hand each time an adjustment is made and note the value of the pen tracing.

9. Check the readings of the humidity pen in the same manner as the temperature pen. However, the humidity readings are compared against the computed wet and dry bulb readings as previously noted. If the readings of the humidity pen exceed the psychrometer reading by ±1.0%, turn the pen adj. screw of the humidity pen slightly in either direction to correct.

10. It is recommended that temperature and humidity readings be checked several times to assure accurate calibration.

INSTRUMENT CARE

Accumulated dirt can very often bring on problems that are difficult to trace. Likewise, prolong operation in harmful environments can cause premature failure of critical components. For best results, the instrument should be inspected and cleaned at regular intervals based on location and usage.

Before any cleaning is attempted, it is important that electrical instruments be unplugged from the a-c power line to prevent accidental electrical shock.

Internal components of the instrument are accessed by removing the chart plate. Components may be lightly brushed with a soft brush to remove loose dust. Proceed cautiously as some components can easily be thrown out of calibration or damaged by rough handling.

In general, the case exterior, window glass and chart plate can be cleaned with a solution of warm water and household detergent. Apply solution sparingly with a moistened cloth.

CAUTION

Do not spray soap solutions inside the case as the hygroscopic element may be permanently damaged through contact with liquid.

MECHANICAL MAINTENANCE

The hygroscopic element should only be cleaned with a soft brush. Extreme care should be exercised during brushing as this element can easily be damaged or thrown out of calibration.

CAUTION

Do not allow any cleaning fluid to come in contact with the hygroscopic element shown in figures 4 and 5 as it may be permanently damaged. This element is composed of a laminated wood and metal helix that is extremely susceptible to damage by chemicals. This element should only be cleaned with a dry brush.

The remaining mechanical parts and linkages must be kept free fo dirt, grease and film in order to achieve efficient operation. The cleaner recommended for this application is Instrument Cleaning Fluid, part number 305700-00-6.

Apply fluid sparingly to mechanical surfaces with a soft brush. Keep working in brush and fluid until surface is clean. Do not force or bend any parts or linkages.

Section V - Specifications

No. of Pens:
Two, temperature & humidity

Temperature Sensor:
Bi-metallic helix

Temperature Range:
0 to 100°F or -15° to +35°C

Temperature Accuracy:
±1.0% of span

Humidity Sensor:
Helical hygroscopic element

Humidity Range:
0-100% R.H.

Humidity Accuracy:
± 3% of span

Humidity Hysteresis Error:
Cycles from 20% to 95% RH are ±5.0% of top span.
Cycles from 25% to 85% are ±2.0% of top span.
For smaller cycles, hysteresis is negligible.

Humidity Repeatability:
Cycles from 20% to 95% RH are within ±2.0%.
For smaller RH cycles, repeatability is ±1.0%.

Charts:
Circular, 8-inch diameter.

Chart Drive:
Model 56912-66A, Electric, single speed, 24 hour or 7 day types.
Model 56912-68A, Spring-wound, dual speed, 24 hour or 7 day wind.

Inking System:
Refillable fountain pen or disposable fiber-tip pen cartridge.

Power Requirements (Model 56912-66A only):
120 Vac, 60 Hz type or
120 Vac, 50 Hz type

Case Dimensions:
12" high x 4 3/8" deep

Weight:
Approx. 12 pounds

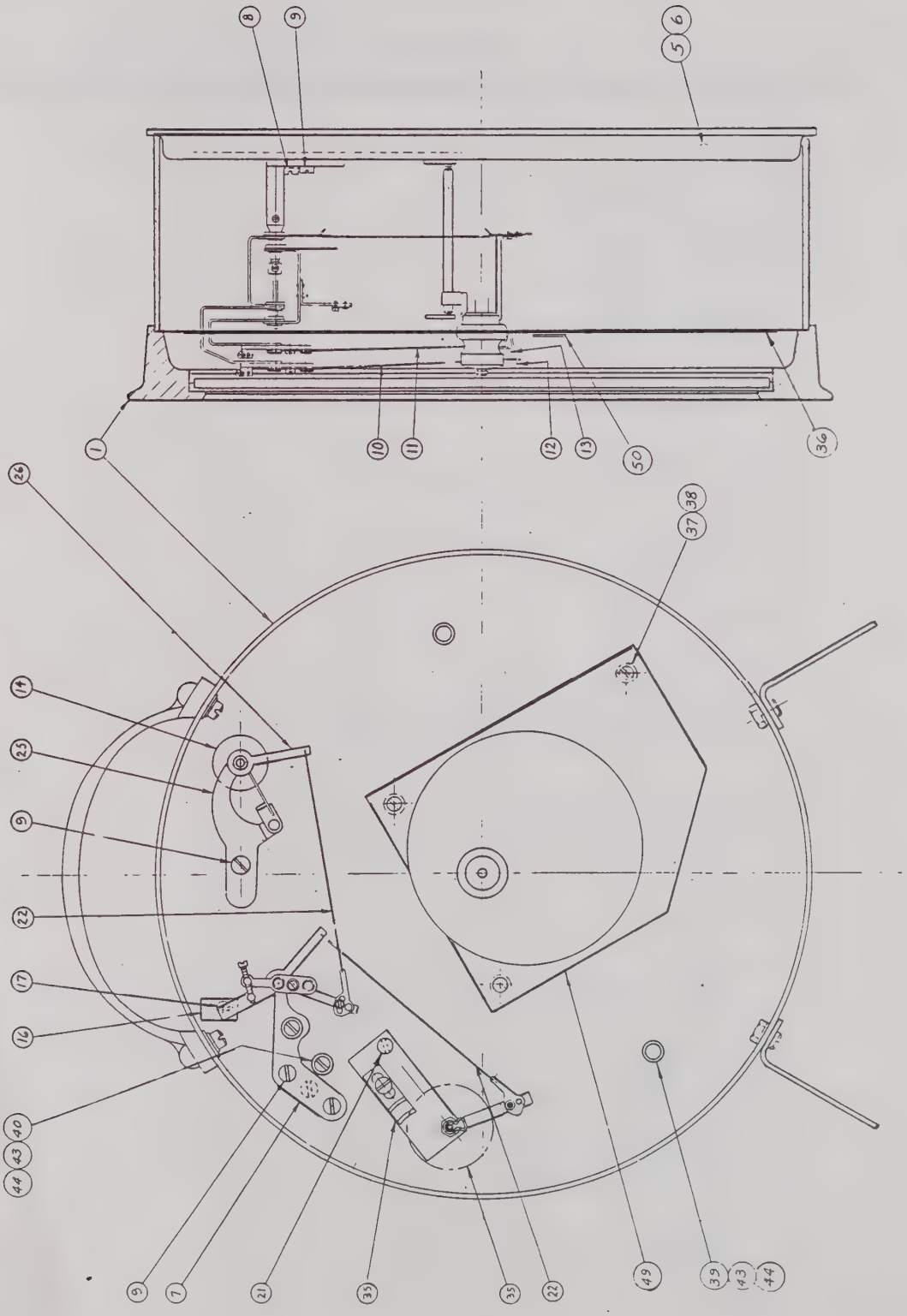

Figure 6-1. Parts List - Model 56912-68A

Section VI - Parts List

MODEL 56912-68A, THERMO-HUMIDIGRAPH
(Refer to figure 6-1)

ITEM	DESCRIPTION	PART NUMBER
1	Case	381457-02-8
	Cover	381467-01-5
	Screw 8-32x5/8 Fil Head	235639-00-1
	Washer	235639-00-1
5	Nameplate	272107-00-0
6	Rivets	205775-00-4
7	Mounting, Pen Arm	272636-00-2
8	Lockwasher	243040-00-8
9	Screw, #6-40 x 1/4" Fil Hd	239770-00-5
10	Front Pen Arm	249705-00-1
11	Rear Pen Arm	249704-00-5
12	Front Fountain Pen Fitting	232915-00-8
13	Rear Fountain Pen Fitting	232914-00-1
14	Humidity Element	273542-00-1
16	Clip	209275-00-6
17	Screw, #6-40 x 3/16" Fil Hd	218339-00-3
21	Screw, #6-40 x 5/8" Fil Hd	219536-00-7
22	Wire, Connector	236515-00-4
25	Mounting, Hygrovane	273212-00-1
26	Arm, Lever	249266-00-8
35	Temperature System	234103-00-0
	Mounting Base	314857-00-1
	Clip	245501-00-2
36	Dial	238221-00-8
37	Collar	206222-00-9
38	Screw	231427-00-0
39	Post Dial Button Head	233428-00-3
40	Post Dial Screw Head	220333-00-9
43	Washer Under Dial Post	206965-00-1
44	Screw	374601-05-4
49	Chart Drive (7-Day/24-Hour)	370341-11-2
50	Indicator	265191-00-9

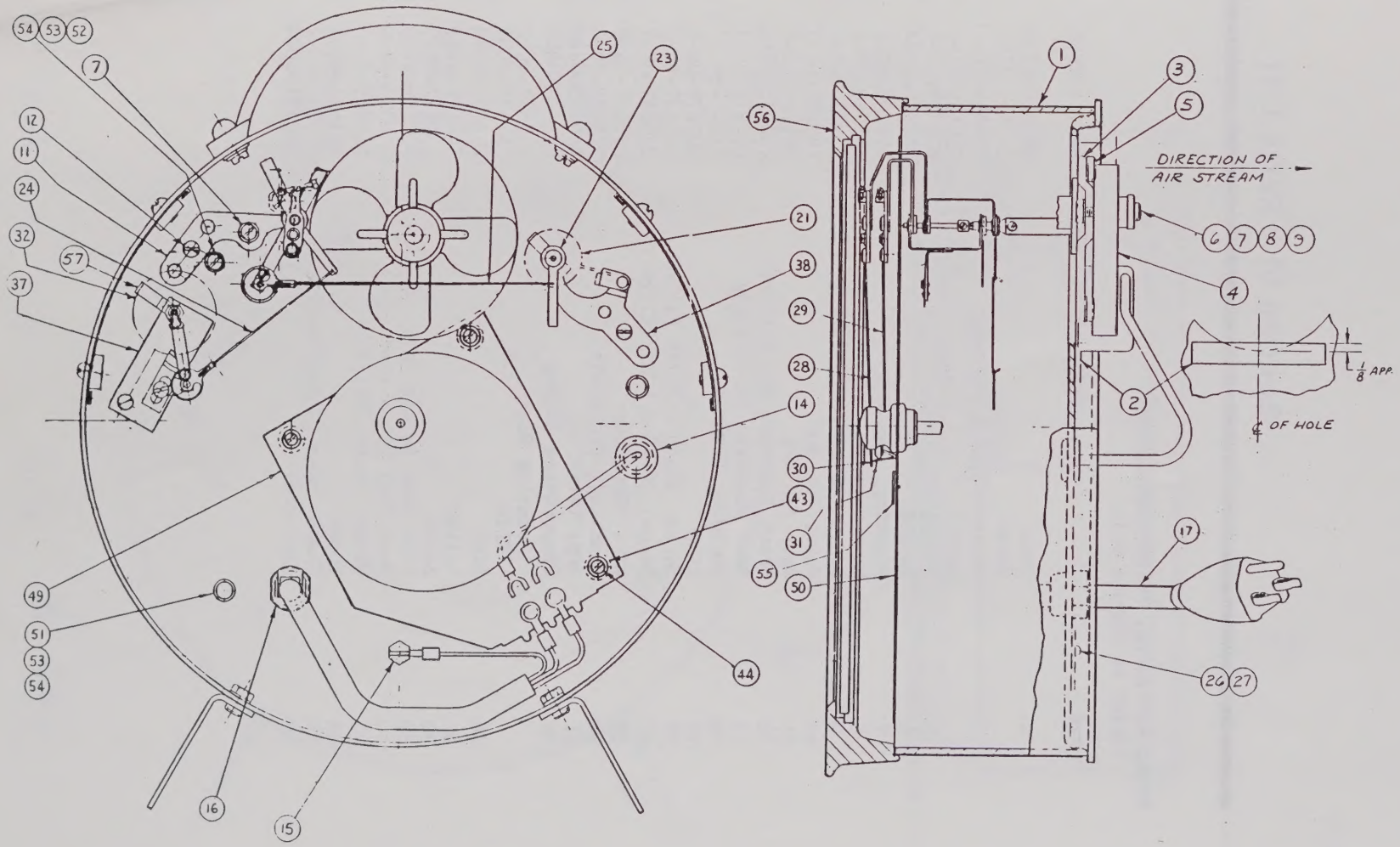

Figure 6-2. Parts List - Model 56912-66A

MODEL 56912-66A, THERMO-HUMIDIGRAPH
(Refer to figure 6-2)

ITEM	DESCRIPTION	PART NUMBER
1	Case	381459-01-2
2	Gasket	387657-01-0
3	Motor Mounting Bracket	381330-01-0
4	Motor	381329-01-1
5	Washer Head Screw #10-32 x 5/16	248556-00-2
6	Screw #6-32 x 1"	374601-16-0
7	Lockwasher, #6	243040-00-8
8	Washer, Flat #6	374615-06-3
9	Nut, #6	374612-06-4
11	Mounting, Pen Arm	272636-00-2
12	Screw, #6-40 x 1/4 Filister Hd	239770-00-5
14	Grommet	295912-00-6
15	Green Ground Screw #8-32	374616-01-9
16	Strain Relief Bushing	382766-01-6
17	AC Line Cord	317644-00-9
21	Element, Hygroscopic	273542-00-1
23	Arm Lever	249266-00-8
24	Wire Connector	246328-00-2
25	Wire Connector	248078-00-3
26	Nameplate	272107-00-0
27	Rivets	205775-00-4
28	Front Pen Arm (Temperature)	249705-00-1
29	Rear Pen Arm (Humidity)	249704-00-5
30	Rear Fountain Pen Fitting	232914-00-1
31	Front Fountain Pen Fitting	232915-00-8
32	Temperature Element	234103-00-0
37	Mounting Base	314857-00-1
38	Mounting Base	273212-00-1
43	Collar (Under Clock)	206222-00-9
44	Screw	231427-00-0
49	Chart Drive (7-Day, 120V 60Hz)	286226-00-6
	Chart Drive (7-Day, 120V 50Hz)	286307-00-6
	Chart Drive (24 Hour, 120V 60Hz)	286221-00-4
	Chart Drive (24 Hour, 120V 50Hz)	286222-00-0
50	Dial	238221-00-8
51	Post Dial Button Head	233428-00-3
52	Post Dial Screw Head	220333-00-9
53	Screw	231427-00-0
54	Washer Under Dial Post	206965-00-1
55	Indicator	265191-00-9
56	Cover	381467-01-5
	Screw, #8-32 x 5/8" Fil Hd	236221-00-0
	Washer	235639-00-1
57	Clip	245501-00-2